

US Army Corps of Engineers
Relevance to the Army and
Nation during Times of Peace and War

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Executive Development Program III

“Changing to meet the challenges of today... tomorrow and
The 21st Century”

Submitted in partial fulfillment for the requirements of the
Career Program 18 Executive Development Program

By

James Carter
Stan Gembicki
James Kieslich
Anthony Levesanos
James Ligh
Craig Roberts
Michael Rogers
Joseph Vietri
Edward Watford

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Executive Summary

Relevancy is the cornerstone of any democracy and capitalistic society. Even within the former Soviet Union where the government had an “iron grip” on its people and government, their inability to remain relevant to its people eventually led to their monumental downfall. In the private sector, relevance is tested everyday in a free market. Customers simply do not come back when you fail to remain relevant. In the public sector, where “monopolistic authority” tends to shield agencies against competition, the road to irrelevancy may tend to be immune from free market forces. The drive for privatization and accountability especially under the auspices of the National Performance Review has permanently changed the competitive environment for public agencies. Missions of agencies who fail to remain relevant and competitive will simply move to the private sector or to another more effective organization.

The Corps is at a crossroad where many within and on the outside are questioning its relevancy. The issue of the Corps’ relevancy in the Army is perhaps louder as we have seemed to become distant from the Army leadership at the installations and Commands. The Corps’ relevancy in civil works appears to be subtler. Although the Corps has been effective in the Nation’s water resource development the issue is whether there is sufficient work in our traditional areas and whether it’s more effective to relegate this role to regional or local governments. It also seems that the Corps as a worldwide organization with many customers and masters is seeing different challenges. It is apparent that it is becoming a greater challenge to properly serve and satisfy the wide constituency of agendas, priorities, and resources.

The key questions are:

. First, are we doing the right things--what are these right things we need to do?

. Second, are we doing these right things correctly-- how do we do this corporately and with world class quality?

. Third, how do we change our “DNA” to ensure change is embedded into our culture-- how do we ensure we continuously change and ¹ improve?

This EDP team project attempts to explore these issues and the thoughts behind the challenge. We recognize that many factors and influences are beyond the organization such as politics and National agendas. We concentrated our issues on those that we can control and influence. Finally we made specific recommendations that we feel addresses the challenge of the project assigned-- how do we remain relevant to the Nation during peace and war?

I. Introduction

We are in historic times where the Chinese proverb¹-- “May you live in interesting times” is extraordinarily apropos. The United States Government and the Defense community are undergoing “gut wrenching” changes to meet the new challenges facing this country. Although we came out of the “cold war” as the remaining super power, the global and domestic challenges are even greater.

Domestically, the role of the Federal government is changing as the people are seeking a smaller, less intrusive and costly Federal presence. Privatization, local cost sharing, and greater local decisions making are becoming policy and reality.

Globally, the Defense community has become the global policemen responding to international crises that may or may not be within our primary national interests. Mission creep from peacekeeping to peacemaking to peace enforcement in operations other than war has been a common and growing practice. The Army is seeking to create a full spectrum force that can meet many threats and mission requirements under an austere budget.

It is clear that the Corps needs to change to reflect dramatic changes that have and continue to occur domestically and internationally. The critical questions are-- how do we recognize the critical signals of change, what do we change into, and how do we implement these changes to be relevant to our customers, numerous masters, and myriad of stakeholders?

We appear to have two internal schools of thought regarding the need to change:

Thought one—we are not broken, we are generally on the right course, and we just need to make course adjustments. Much criticism is based on

¹

misperceptions. Once we educate them and make minor adjustments, we will be back on track.

Thought two-- we need to make major changes, as we are significantly offcourse. The environment has changed; we have not changed concomitantly.

Thought one implies that we are doing the right things but perhaps we need to do them better, i.e., execution, less costly, more timely, etc. Thought two implies we are generally approaching our business poorly. It is irrelevant if we do them better than anyone else, if we produce products and services no one wants. We need to address this issue as it provides a foundation for the basis for change. Thought one focuses on better execution and thought two focuses on re-inventing one-self.

II. History of the Corps- A Bridge to the 21st Century

The "Bridge to the 21st Century" has been a common theme for many seeking corporate commitment as we move into the next millenium. The new millenium appears to have taken an extra focus as it represents a new epoch for hope as well as challenges.

The Army and the Corps of Engineers need to meet these challenges as with any other corporation or organization that hopes to survive. As the Army moves to change into a post cold war force so must the Corps of Engineers. Many have concerns that the Corps has perhaps become too far removed from its roots of supporting the Army. Criticism from customers are not taken lightly and needs to be addressed. To be fair, the many demands, priorities, and missions of the Corps may give a perception of lesser focus or service to a particular mission. As the Army searches to shape itself for the 21st century, the Corps too needs to shape itself and address its weaknesses and take advantages of its strengths.

The Corps of Engineers has a rich history of service dating back to Bunker Hill (Breeds Hill). Since 16 June 1775 the Corps has met the call to service. The Corps has responded to these needs through change to what is now a global organization with over 34,000 people and an annual program of over \$4.5 billion. This history of service and tradition to meet the needs of our Nation was born with Colonel Gridley and his small unit of Sappers at Bunker and Breeds Hill and carried to this today with our 49th Chief of Engineers, Lieutenant General Joe N. Ballard.

The Corps has responded to each challenge throughout its history. We now face another challenge to shape ourselves to ensure we are relevant to the Army and the Nation. Lieutenant General Joe N. Ballard has set forth his vision

As we reshape ourselves and look for solutions to continue to be relevant to the Army and the Nation we need to ensure we answer and address fundamental questions.

- Who are we?

The Corps has many faces reflected in its many missions. To the general public we are the Federal Engineer that are builders of dams, harbors, flood control, and recreation projects. To the Army we are builders of facilities. In disasters we are the red shirted government workers who are there to give a helping hand. To developers and ecologists we are regulators of wetlands.

As in the Hindu fable “The Blind Men and the Elephant” by John Godfrey Saxe, depending on what part of the elephant you touch you have a different perspective.

- What are our core competencies?

On the surface, multi-disciplinary planning, design and construction are our core competencies. We feel this description is too simplistic. If this was so, any architect-engineer firm could have easily replaced us. Certainly planning, design and construction are the foundations of our core skills, but it transcends to more than these technical skills. It is the whole sum of being able to put the many business processes together, solving problems, and most importantly being able to execute. In the past these competencies were a National asset. Will these competencies still be National asset in the future?

The USACE competencies are:

- Responding quickly through a world wide organization
- Assembling expandable, multidisciplinary technical teams
-
- Facilitating/brokering cooperative arrangements among multiple constituencies (public and private)
- Providing full life cycle project services
- Implementing public policy within the Army ethic.

In the past we were often the sole providers of the engineering and construction services for our customer. In the future our role will change dramatically. We are increasingly seeking work from customers who already possess technical, contracting, and management skills to varying degrees in their own organizations or have other sources for these skills. If we are to be their partner of choice we must listen to their needs, recognize their capabilities, and work

continuously in full partnership to leverage the skills of each partner to achieve the optimal team to solve the challenge facing our customer/partner. In many instances this may mean doing work in a different manner than we currently do it. We may no longer have the management lead in all of our traditional services; instead, we may be left to provide limited technical products or services under the management direction of others, or to act solely as the facilitator (“honest broker”) between other agencies and private sector entities. Consequently, in the future we will need to expand upon two very critical core competencies:

- Facilitation/brokering cooperative arrangements among multiple constituencies (public and private) to form effective multi-organizational teams.

Providing a structural, rational approach to problem solving and a tradeoff analysis methodology that ensures “best fit” decisions considering the input of all stakeholders.

- Who are our customers?

It is clear in the business sense that we need to shape our organization around our customers. In the private sector, customers’ satisfaction is clear. On the surface it appears that this is a simple task. As public servants responsible for the stewardship of public resources, we also have to enforce a higher level of standards and national policies sometimes at odds with the desires of local customers. It is clear that our primary customers are those at the installations for our military program and the public for our civil works. However, are our customers at installations, the soldiers who use facilities, the DPW who manages the facilities, the Commanders who manage these facilities, or Congress who fund these facilities. In civil works, are our customers the users of our public infrastructures, the taxpayers who fund these projects, or local governments who operate and maintain these facilities? Other critically and equally important stakeholders include environmental groups, local communities who are impacted, etc. With so many masters it is a challenge to determine which customer need is paramount and how best to meet the expectations of each one.

III. Who should we be?

Establishing who we are and who we want to be is fundamental. The gap between where we think we are (or should be) and where we actually are is the work we need to accomplish.

The Corps has been trying for many years to shape itself for the future. The group’s best memory on the Corps’ past attempt to formalize a strategic

planning process to address this gap was by LTG Henry Hatch in 1988. His transitional meeting^{2/} focused on nine workshop topics:

- . Water Resources
- . Future Missions and Support Opportunities
- . USACE Support to Army Communities of Excellence
- . The Air Force Support Challenge
- . Technology Management and Application Leadership
- . Human Resource Management

The discussions^{3/} dwelled on

- . What's our business focus?
- . Methodology for alignment or evolution?
- . What does accountability mean? How can we do it?

In 1989, LTG Hatch developed the following focuses:

- . Life cycle project and program management
- . Increased cost consciousness
- . Total Quality Management (TQM)
- . Creating a vision of USACE's future
 - innovative thinking
 - Strategic planning
 - Foreign nation building as part of the Army strategic purpose
 - Find new opportunities to serve the nation at home

Almost ten years later, we are still trying to fully implement life cycle project and program management, reduce cost, and create a vision for the Corps.

Every two years the Engineer Studies Center (ESC) conducts a conference to discuss critical Army and Engineer issues. In December 1987, ESC conducted a conference that highlighted principal Army and Engineer issues. The USACE issues^{4/} were:

- . USACE Strategic Planning
 - Changing roles
 - New organizational structures
- . USACE Management
 - Manpower distribution
 - F&A systems
 - Cost-benefit analyses
 - Cost of doing business

The USACE issues in 1990 were:

- . Environmental Assessment
 - International
 - National
 - Military Installations
 - Training Areas (and Training Doctrine)
- . Strategic Planning
 - International trend analysis
 - Mission Area Analysis
 - Army
 - USACE
- . Total Quality Management
 - USACE
 - ESC
- . Mobilization
 - Army
 - USACE
- . Installation Support
 - DEH/USACE interface
 - RPMA/MCA investment strategy
 - Management strategies
- . Nation Building
 - Foreign
 - Domestic
- . USACE Management
 - Commercial activities
 - R&D transfer
 - Resource optimization
 - Wartime Support

After eight years many of these issues exist today.

In 1990 (circa August), a strategic process called COMPASS (Concept of Management, Purpose and Strategies) was adopted. This process identified the following strategic and corporate issues:

- | | |
|------------------------------|------------------------------|
| . leadership | . evolving missions |
| . program/project management | . water resources |
| . performance accountability | . military facilities and |
| installations | |
| . corporate realignment | . environmental engineering |
| . quality | . America's infrastructure |
| . management of information | . Nation building assistance |

- . talent
- . emergency preparedness
- /response
- . innovation
- . space initiatives
- . partnerships
- . customer service
- . marketing ethic
- . environmental ethic

At several follow-up conferences, the following additional issues were raised.

- . Senior Leadership Conference (24-27 Sep 90)

District and Division Roles in New Mission Development: Building Partnership
Corporate Framework for Future Missions

- . Mid Management Conference/SLC (30 Apr-3 May 91)

Managing change
Building a Creative/Exciting environment
Need to improve internal relationships
Partnering

- . Senior Leadership Conference (9-12 Nov 92)

Building Relationships

The point of this summary is that Corps has been continuously trying to identify strategic and corporate issues to shape itself. Key learning points from all these previous efforts appear to be:

Change is not a one-time activity but a continuous improvement process. We need an effective continuous strategic improvement process.

The Corps is not world class in implementing change, as many major corporate issues raised almost ten years ago are still issues today. We need to identify areas that need to be world class.

Signals about our problems were noticed almost ten years ago.

IV. Strategic Planning

- a. Strengths, Weaknesses, Opportunities, and Threats

Many equate the next battle as a "come as you are" environment. Essentially, we will need to fight with the resources and capabilities we currently have and should not expect anything more. As engineers, can we meet this short contingency operations (30-180 days) challenge? If we can expect the next battle or OOTW to start and be completed within 30 days, how can we respond if we need 30 days "just so we can have the concrete cure."? We may have problems keeping up with the operational tempo. Traditional construction options are limited in this environment. Real estate leases and contracting for goods and services are more expedient options in time sensitive environments. The engineer community may be operating on a different time frame (perhaps not of its choosing) than that of the battle force. How do we keep "the engineer" as active contributors when their traditional roles and strengths are not what will be needed. What kinds of expertise and capabilities can we bring to the table that will make the CINC want to invite us?

To keep pace, can we envision these options?

Use of flexible facilities.

To support the flexible needs of Force XXI, engineers may need to build quickly assembled generic football-size facilities that can be readily changed. These generic buildings would consist of a large warehouse/open-bay spaces with built-in/embedded technology (communications, HVAC, NBC protection, power, computers, etc). Occupants would bring in their own mobile interiors. When missions and tasks change, the interior changes. For example, these facilities can initially store pre-positioned equipment and supplies, be easily converted to maintenance shops, then changed to a field hospital and after hostilities, revert back to storing pre-positioned equipment/supplies. To further meet the time dynamics and operational tempo, these generic facilities may need to be pre-positioned around the world.

Greater use of commercial resources.

Reliance on commercial sources will most likely be necessary to meet the vision of Force XXI especially for the life support infrastructures, communications/information, and logistics. It will be too expensive to bear the up-front and maintenance costs to develop a global system and we can not expect to cost effectively support everyone everywhere. LOGCAP is a process to remedy this shortfall but has not been institutionalized as part of the Army's vision. LOGCAP should not be viewed as a threat to force structure but should be viewed as a resource for accomplishing a mission in an environment where force structure and resources are declining or non-existent. We feel we need to recognize the need for commercial support in the Force XXI vision. America's industry and business need to support America's Army. Can the Corps

capitalize on its extensive experience with contracting and work with the private sector to enhance this relationship.

Transition to Peace.

We recognize that the Army's primary role is to win the battle. However, there is a need and perhaps a moral obligation that we leave political and social systems and adequate life-support infrastructures that ensure a smooth transition to peace and an environment that will lead to a democratic form of government. We think this phase is a vital part of our vision. Recent experiences in Kuwait and Somalia appear to support this need. It is also a phase of a contingency operations where the Corps can potentially perform its traditional engineering and construction role/missions.

Engineer Enhancement.

The Corps has a great opportunity to contribute to Force XXI and the Army's concept of operations for the 21st Century war and OOTW (Operations Other Than War). As the active and reserve components are experiencing reductions in their engineer assets, a void is being created in engineering capabilities especially in the EAD (Echelon Above Division) AO (Area of Operations) and operations other than war.

Division and Corps (Army Corps structure vs. USACE) elements will have their own engineer units, either combat engineer or construction battalions. Corps engineer units are usually reserve assets. EAD operations may not have enough engineer resources especially during the first H+30-60 days. Since it takes time to mobilize reserve engineer units or it may not be politically expedient to activate reserve components, a potential void exists.

Reserve Engineer Commands (e.g., 416th and 412th) are intended to fill this void but many speculate they will not be able to adequately perform within the time sensitive environment. MACOM Staff Engineers (DCSENG) or DEHs have little engineer resources to enhance the EAD engineer capabilities. DEHs also rely on reserve units to "plus up" their organization. These units arrive after the combat units they are intended to support.

Is there a niche for USACE? As we are trying to find focus, purpose, and missions for our USACE Divisions (MSC), these offices may be able to play a greater role to meet the needs of the Engineer Commands and EAD or EAC engineer operations as they are forced to downsize as they lose resources. Since USACE already has forward deployed assets (e.g., Korea and Europe) with local expertise, we can actually enhance the EAD/EAC Engineer Command concept.

The Digital Battlefield.

Desert Storm gave us an enticing glimpse of the digitized battlefield. Images of smart weapons hitting targets saturated television coverage. The public perhaps saw only a minute part of the digital battlefield. We did not see the digital contributions to mobility (e.g., DGPS), communications, intelligence, mapping, logistics, SCUD hunting, etc. As the Army moves into digital technology, the expectation of field commanders (our customers) may heighten. If the benefits of digitization accrue as expected, commanders will have integrated information that will be near time with the ability to have extremely shortened planning and decision-making times. Commanders can expect their operational tempo to concomitantly increase in pace and vigor. They will expect supporting elements (e.g., engineers) to be equally capable of keeping pace with their operational tempo.

As engineers, can we meet the pace of this potentially expedited operational tempo, especially with the challenges of short contingency operations (30-180 days)? Traditional planning, design, and construction options are probably quite limited in this environment. What kinds of digital expertise and digital-based engineering capabilities can we bring to the table that will make the CINC and field commanders' value us? What do they expect us, as engineers (especially EAD areas of operation), to contribute?

Interoperability.

A fully digitized battlefield requires information and communications systems that are interoperable between the services at various command echelons. If the Corps wants to be an active contributor, we need to be as seamless as possible to the rest of the services. This is a challenge as the Corps has traditionally developed its own standards and operational procedures, often under the purview of civil works. The Corps will need to become fully interoperable with the rest of the Army.

The Army also needs to recognize the Corps' requirements. Since we are not a TDA organization, we are not entitled to organic communications equipment that will allow us to be part of the Army net.

The Engineers' role?

What is our role (as engineers) in the Army's vision of the battlefield for the 21st century? Previously we asked, "what do we as engineers bring to the table to assist the CINCs in their missions (recognizing that most missions will be from 30-180 days)?" If we cannot even enter the battlefield because of our inability to communicate and operate digitally, we will not be able to contribute. If we

cannot contribute digitally, we will probably be replaced. Title II, LOGCAP, CREST, contingency contracting, etc. will be viable options for the CINC.

Our knowledge of international work, work with commercial contractors, inventory of digital engineering information (e.g., CADD, GIS, mapping, etc.), experience in emergency responses, and geographic presence can be assets. We may need to find a way to digitally integrate these capabilities and package it as a "force projection" multiplier.

Digital Leadership in vision.

We need to be seamless with the Army and more importantly, our Divisions (MSCs) need to be digitally seamless with the CINC's field assets to be able to contribute to the overall operations. Our strong stovepipes are a hindrance toward developing this seamless environment. Our experience in just agreeing to a common Corps WAN system, our Herculean efforts to create a Corps-wide common architecture, and our on-going challenge to create a seamless Corps environment among our many Corps offices are just "tips of the iceberg" in the effort to create a seamless digital workplace. Our Corps leaders need to look beyond stovepipe loyalties and turf battles and provide the digital vision.

The potential of the digitized battlefield may also influence command and control relationships. Two scenarios we studied in school that perhaps reflect parallels: the Cuban missile crisis and the Iran rescue attempt. Technology allowed both Presidents Kennedy and Carter to be directly involved with the operations by giving them the capability to directly communicate with the commanders in the field. Kennedy had the capability to speak with ship captains, bypassing intermediate commands. Carter had the capability to speak directly with the task force commander in Iran.

We can foresee in a completely digitized battlefield, the private or NCO or second lieutenant on the FEBA having direct access to senior commanders echelons above his immediate command. They will also have access to as much information as the senior commanders. We also see information being moved simultaneously and unfiltered between soldiers, NCOs, platoon leaders, company commanders, and battalion commanders to the division (or task force) commander. How does this capability and speed of information flow affect our current notions of command and control within the Corps?

b. One Strategic Plan, One Corps

The Chief of Engineers has published his vision 4/. Our vision statement is

“The world’s premier engineering organization. Trained and ready to provide support anytime, anyplace. A full spectrum Engineer Force of high quality, dedicated soldiers and civilians:

- . A vital part of the Army
- . The Engineer team of choice- responding to our Nation’s need in peace and war
- . A values-based organization- respected, responsive, and reliable”

Our master strategy known as Corps Plus embraces three focus areas:

- . Revolutionize effectiveness
- . Seek growth opportunities
- . Invest in people

with seven substrategies that include:

- . Align for success
- . Satisfy the customers
- . Build the team
- . Serve the Army
- . Enhance capabilities
- . Build strategic commitment
- . Reshape culture

c. The Chief’s Vision as A Foundation

We need to use the Chief’s vision as the foundation for any change. We need to link this vision with our recommended solutions. The Chief provided the skeleton (framework), we need to provide the muscles.

V. Integration and Implementation of Strategic Plan

a. Relevance of mission areas to the Army.

Military

Wayne Grezky was asked how he could score so many goals-- he replied that he doesn’t play the puck on where it is but plays for where the puck will be. DOD will soon prepare for the security challenges of the 21st century. The Corps needs to be ready on where DOD wants to be in the 21st century. DOD’s “Transforming Defense” is to move away from the ability to fight two major regional wars at the same time. Key components of this transformation are:

- . Devote \$5 to 10 billion per year on new weapons and war-fighting concepts
- . Refocus the Army National Guard's role
- . Further base closures and changing traditional bases away from on-base housing, commissaries, etc.

DOD has developed an "Army After Next" agenda. We need to be where the puck will be.

Installation Support

The armed forces are generally becoming smaller in terms of both budgetary allocations and troop strength. The Quadrennial Defense Review indicates further reductions are necessary. Our national defense budget will continue to shrink. The National Defense budget has fallen by approximately 15% in the past 5 years while troop strength has dropped 25%. Yet, the missions of our armed forces have not changed. As a result, the military is seeking innovative ways of accomplishing mission essential tasks while reducing their overall operating expenditures. The Corps of Engineers is in a unique position of being able to provide installation support to the military. Providing this support is not a simple transition. We need to change from predominately a planning, design, and construction agency into one of facilities management. This is not a trivial change. One of the steps implemented in some Division offices is the concept of Project Management (PM) forwards. Utilizing PM forwards in combination with a competent support structure will allow the Corps to be "where the puck is at".

Revolutionize Effectiveness; Align for Success.

If we commit to a paradigm shift that incorporates military installation support in each of our Districts' visions, we may be in position to make long-term partnership agreements of mutual benefit with the U.S. Army and the other branches of the armed services.

Each military base has a Director of Public Works (DPW) responsible for management of the installation's infrastructure and associated functions. The responsibilities of each DPW differ between bases and commands; however, most of them have responsibilities relating to high quality facilities, housing, engineering services, and environmental oversight. Each Corps District is proficient in performing many of these missions and we may be of valuable service to the military. In order to begin, we should develop relationships with key personnel within military base Directorates of Public Works, or similar commands.

Identify and establish preliminary POC relationships with individuals at local bases.

Project Areas of Expertise. At present, and for the past quarter of a century, our operational project staffs have been performing many of the same functions that take place on military bases under the DPW. Our project managers are responsible for multi-million dollar operations involving the management of multi-purpose water resource development projects. With little effort, they can expand their operations to encompass similar functions that may be a challenge for military base DPW's in light of the shrinking federal budget. In addition, Districts maybe able to consolidate O&M and EPS (Engineering, Plans, and Services) requirements for several installations into regional contracts managed by Districts with liaison personnel stationed at each DPW.

- **Infrastructure Management.** We have developed expertise in managing and maintaining roads, sewer and water lines, and providing electricity to facilities. These skills can be applied to the maintenance of, or development of new military facilities.

- **Service Contracts.** Our projects have led the Districts in developing and managing service contracts including indefinite quantity contracts.

- **Mowing.** Service contracts for mowing at our projects total thousands of acres.

- **Signage.** Each project has developed and maintains a comprehensive Sign Standard manual that catalogs each sign at the projects. Over 17,000 signs have been developed in accordance with strict national guidelines at our projects.

Painting. The military adage, "if it doesn't move, paint it; if it moves paint it twice" applies as well to our projects. Over the years, specifications have been developed and implemented for painting just about anything imaginable, ranging from tainter gates on main dams to file cabinets.

- **Cleaning/Janitorial.** Each recreation area has been cleaned (litter pickup, trash removal) via contract for the past two decades.

Environmental Oversight. Each project manages thousands of acres of federal land with objective of enhancing the existing wildlife habitat and in accordance with the same federal laws and regulations that apply to military bases.

- **Engineering Services.** The Corps is recognized as the leading engineering firm in our nation and has performed its own engineering work, including but not limited to, recreation area design, facility design, and

troubleshooting facility and infrastructure challenges or problems. With little effort, this can be expanded to include nearby military bases.

The Rock Island District is performing some of these functions for the Rock Island Arsenal, on which their District Office is located. The Ft. Worth District is performing a similar role at Ft. Hood, and is in the process of developing a comprehensive plan that may expand their operations to include numerous military bases. Their plan, once finalized, will be exportable to other districts and their efforts have captured the attention of HQ personnel in Washington.

With each district commander's approval, a team of proactive individuals, primarily from the project offices; be assembled to develop this concept. Their mission would be:

- Expand this proposal into an action plan
- Develop a briefing package, such as a PowerPoint presentation
- Establish POC's at military bases within our District
- Propose a meeting between representatives of both agencies to present and discuss this concept.

Invest in People; Build Strategic Commitment.

Introduce and build support for the expansion of the District's mission to include work on military bases.

With continued decreasing military budgets and resources, we are in a unique position to form new and lasting partnerships that could be of great benefit to all parties involved. Becoming involved now could result in the development of new missions for many districts, which could carry them well into the next century.

Civil

Under its Civil Works mission, the Corps is responsible for the development, management, and protections of the Nation's water resources. Over the next several decades, there will be continued and accelerated social interest, both domestically and internationally, in the quantity and quality of ground and surface waters; the protection and restoration of environmental and cultural resources; the availability of recreation, leisure and tourism opportunities; the repair and restoration of failing infrastructure; the provision of inland and coastal waterborne commerce; and protection from natural threats created by droughts, flooding, and storm drainage. There will be an increasing demand to address water resources problems in a comprehensive manner based on river basins, watersheds, and coastal zones. Water projects will likely be multi-

purpose in nature with consideration given to reevaluating the present operation and purpose of existing infrastructure. In addition, with continued development in the USA, the need remains for a strong regulatory program to deal with pressures on river systems, watersheds and wetlands, such as the Everglades and Chesapeake Bay.

In order to effectively capture the growing demand within this market, the Corps must explore innovative financing and forge public/private stakeholder partnerships to assist non-Federal sponsors as they assume more responsibility for project funding. The Federal cost share of Corps projects will become increasingly difficult to secure. The water resources share of Federal expenditures has declined from 61 percent in 1965 to 30 percent in 1993. The result will be increased dependence upon local and state government funding for water resources projects. Decreasing budgets on both the Federal and non-Federal side will ultimately require increased partnering among governmental and non-governmental agencies. There will be a greater demand for institutional and financial analyses to identify the means to fund the implementation, operation and maintenance of water projects.

Future technology will play a large role in developing and sustaining water resource projects. Increasing worldwide communication networks will result in the availability of inexpensive engineering services that will be strong competition in the eyes of cost-conscious customers. There is an increasing demand for state-of-the-art technology related to such areas as CADD and Geographic Information Systems (GIS), simulation modeling, risk and uncertainty analyses, hydrologic modeling and other computer related services. This expertise will be increasingly important for such matters as operating and managing existing reservoir projects (both others) and ours, understanding the physical and environmental impacts of regulatory actions and developing environmental restoration projects. To remain competitive, our technology platforms need to provide for universal Corps and customer access to and interchange of data.

Corps-wide, the Civil Works program will continue to decrease

With few exceptions, the era of traditional flood control projects will end. Beyond necessary navigation projects, future projects entering the Corps Civil works pipeline will primarily be environmental restoration projects associated with acid mine drainage, beneficial uses of dredged material, stream restoration, habitat restoration, storm water management, and total basin/ecosystem management. The Corps has had some success in being funding for several design-construct environmental infrastructure projects; however, the long term potential for these projects will require broader legislation. There is also potential for reallocation projects at several existing Corps reservoirs. Future

projects will generally be more modest in size than previous civil works construction.

Support For Others

The Work for Others (WFO) mission provides reimbursable engineering, environmental and management services to other Federal agencies, state and local governments, non-governmental organizations, and the U.S. private sector. The Support for Others (SFO) program represents that portion of the WFO mission that is executed with Civil Works personnel resources for non-DOD Federal customers. The Corps provides reimbursable support to a wide variety of domestic and international SFO customers, ranging from assisting the Environmental Protection Agency in the clean-up of Superfund sites to providing reimbursable infrastructure assistance to foreign governments. This program complements the Corps work for the Army, broadens its range of expertise, and relieves other agencies of the need for maintaining their own engineering and technical service capabilities. Like the Military Programs and Civil Works missions, the SFO mission is accomplished largely with contracts with the private sector.

The overall downsizing of the Federal government presents a significant challenge for agency managers, as staff reductions are often not matched with corresponding decreases in agency missions. In the age of shrinking Federal budgets, all agencies will be forced to minimize new structures and focus on renovation in their capital improvement programs. Therefore, the Corps is more likely to have a role in the operation, replacement and management of existing projects or infrastructure for other agencies. Opportunities may also exist to convert unneeded facilities to new, higher-priority uses. Disposal of deteriorating industrial facilities and the environmental clean up associated with those activities will be a major market. This trend presents a significant opportunity for the Corps to apply its technical and managerial capabilities to assist other agencies. By using its in-house technical expertise, leveraged by its experience managing private sector contractors, the Corps can help those agencies execute the infrastructure and environmental work associated with their respective missions without the need for those agencies to maintain full in-house technical staff. Supporting sister agencies and other customers serves to expand the Corps skill base, strengthening the Corps ability to carry out its traditional civil works and military missions. The diversity of work encountered in the SFO program challenges the Corps to apply its planning, engineering, design, and construction, environmental, and other expertise in new and innovative ways. The close proximity of our District offices to the regional offices of other Federal agencies is a benefit we need to exploit.

Another important trend concurrent with the downsizing of the Federal government is the shift of power, influence, money, and responsibilities from Federal government to state, local, and regional levels of government, and the private sector; as new innovative public/private partnerships and other complex working arrangements evolve. Instant communication leads to instant public reaction and all decisions are made in a "fishbowl" environment. The ability to manage public issues and public programs effectively and work cooperatively with differing agencies and governments becomes an increasingly important performance criterion for public agencies.

The Corps can provide technical and managerial assistance to state and local governments as long as such assistance is not reasonably and expeditiously available from the private sector. With its experience in plan formulation, alternative analysis, and cost-benefit comparison, the Corps is eminently suited to help state and local governments make sound investment decisions on water resources, infrastructure and environmental projects.

The Office of Management and Budget (OMB) has long recognized the value of the Corps reimbursable support to other Federal agencies and the contribution the Corps makes to efficient and effective government. Of the total of 27,555 full-time equivalents (FTEs) which OMB allocated for civil works in FY 1996, 1,283 are dedicated to SFO work. In the Fiscal Year 1997 budget, OMB offered the Corps up to 500 additional Civil Works FTEs for the SFO portion of the Corps reimbursable program contingent on demand for additional Corps support from both existing and new customers.

Work for Foreign Governments on US Soil can be obtained via the Foreign Military Sales (FMS) Program and the Department of State. The FMS program is a well-established program whereby the US provides various goods and services to several allied nations, and has been used by the Corps to provide Real Estate and A/E services to the Federal Republic of Germany, Israel, South American Countries, and the Kingdom of Saudi Arabia. Undoubtedly, other foreign entities are in need of similar assistance; however, it may be improper for Corps personnel to contact foreign diplomats directly. Therefore, the Corps should make every effort to promote its services to the Department of State who may be in a position to recommend the Corps to foreign customers.

Work on foreign soil, particularly in the areas of infrastructure, environment, and water resources, is another market with enormous potential. The work, however, is extremely difficult to attain and even more difficult to perform. The transatlantic Program Center may prove to be an important in-road to this market and should be exploited to the fullest extent. The Corps should further

enhance its capability to provide overseas assistance by identifying employees who are willing to take extended foreign assignments.

Environmental

Environmental interests and concerns are very strong within the USA and are likely to continue in that manner. This interest includes both environmental restoration as well as the previous focus on environmental remediation. Pressures for efficient, effective, and timely clean-up of hazardous and toxic waste sites will continue. In addition, elected officials at the Federal and state level have strongly supported legislation and funding for environmental restoration of the many river systems. The Corps can well expect an increasing demand for services related to the planning, engineering, and construction of habitat restoration projects. Environmental stewardship is also a strong interest of the Army and it is expected that military installations will also have a continued need for environmental-related support. Existing legislation requiring the clean up of hazardous and toxic wastes will likely generate additional work for the Corps from the Army, Department of Defense, and other Federal agencies. With strong environmental interest in both the regional and state resource agencies and the environmental special interest groups, there should be ample opportunities for the Corps to form alliances for environmental projects.

To gain insight into these issues we conducted an informal survey of our team to grade our current capabilities and the importance of these activities in the future. The difference (delta) is the strategic gap. This gap is the internal work that the corporation needs to close.

“Report Card”

	Current Grade	Strategic Importance Potential
Military		
Planning, design & construction	Amber	High
Installation Support	Red	High
Military Operations	Amber	Medium
Civil		
Planning, design & construction	Green	High

Operations & Maintenance	Amber	High
Regulation	Green	High
Emergency Management	Green	High
Support/Work for Others		
With other Federal agencies	Amber	High
With State or local agencies	Amber	High
International	Amber	High
Environmental		
Remediation	Green	High
Restoration	Amber	High

Obtaining a significant amount of work in the SFO submarket will require the District to overcome two obstacles that do not exist in the Military or Civil Works submarkets: the Corps is an unknown entity, and the Corps has significant competition. Interviews with government officials in the National Capital Region (NCR) indicate the Federal Community is largely unaware of the Corps capabilities as they relate to vertical construction. This is further complicated by the fact that most Federal agencies are unaware that they have a "choice" when purchasing government design, construction, or real estate services. Despite the fact that customer satisfaction appears to be very low, GSA has a virtual lock on the Federal market. For this reason alone, Corps leadership may wish to consider potential partnership opportunities with GSA. For example, according to the 1996-2000 National Capital Improvement Program for the National Capital Region (Washington DC and vicinity), GSA and DOD will combine for over \$3.7 billion in new construction over the next four years. Health and Human Services, Pennsylvania Avenue Development Corporation, and the Smithsonian Institution will generate the next largest non-military construction programs in the national capital region, respectively.

We also asked what potential future work that we are not in might be critical for our survival. We received the following response. (I would change this to indicate "We also asked our team to indicate those areas that they see as high demand services for the future:" i.e., areas we need to expand or refocus our skills and resources")

- Installation support/Facilities management (The military community will continue to see significant personnel reductions, making it difficult, if not impossible, for some agencies to provide their own technical/engineering support. As a result, Installation Commanders may well turn to the Corps to perform much of the design, construction, maintenance and repair work necessary to keep installation facilities functional.)

- Facilities renovations /modernization (With fewer new facilities being built, defense agencies will be forced to renovate/modernize existing facilities. When existing facilities cannot be modified to meet mission requirements, agencies may opt to lease new facilities from the private sector. See real property leasing below)
- Space planning/interior design
- Vertical construction
- Force protection and security design
- Environmental remediation
- Environmental restoration
- Comprehensive real property leasing (Although Federal agencies have recently been given the option of leasing office space themselves, few agencies have the capability or expertise required to do so. Lacking the expertise required, agencies dissatisfied with GSA's past performance are likely to look elsewhere for the full suite of leasing services, including design and construction of tenant fit-out, furniture acquisition/installation and move coordination. Demand for a GSA alternative appears to be quite high; however, Corps leasing services are not well known outside of the Military community. Therefore, the Corps must create a greater awareness of its leasing services before it can capture the full potential of this market segment.)
- Contracting support (With continuing pressure to downsize, many Federal agencies will look for ways to outsource some of all of their support services. The Corps is uniquely positioned to capitalize on the demand for Contracting Support services, particularly as they relate to A/E acquisition. Although Contracting Support is not generally considered a service the Corps may wish to market, it may afford the Corps a greater opportunity to present its design and construction services, and should be considered for its potential spin-off.
- Water resources systems analysis
- Disaster response support

Based on a review of the home pages of Federal agencies, and information on state and local governments and foreign governments our team prepared the following list of target agencies with both capital improvement program needs and financing:

PRIMARY TARGET AGENCIES

1. Department of Defense, Washington Headquarters Service
2. Department of Defense Installations

3. General Services Administration
4. Environmental Protection Agency
5. Health and Human Services
6. Smithsonian Institution
7. Department of Energy
8. Department of Interior
9. Federal Emergency Management Agency
10. National Aeronautics and Space Administration
11. States and Local Governments
12. Foreign Governments

VI. Conclusions

The trick of being relevant is to ensure that we have dynamic systems in place that will learn and adjust. Setting any specific objective will only be fruitless as in the time the organization adjusts; a new set of environmental factors will be in place that will make these objectives obsolete. The organization needs to take on key attributes that will make it nimble, flexible, customer-oriented, and self-learning. Unfortunately, where we think we are and where we actually are is often not the same. This gap usually doesn't occur overnight but gradually widens by not recognizing "weak" signals. This gradual erosion blinds our sense of urgency. The upturn is always expected around the corner during the next quarter or fiscal year. When these weak signals become strong ones, it's usually too late. We won't go bankrupt like private companies but outcomes can be equally devastating. Significant reductions in force lead to a cascading morale that produces an inept, dysfunctional organization. Organizations that are no longer relevant should disappear; this is the impact of economic efficiency in markets. The Corps is a proud agency that can still significantly contribute to its citizens as it did at Bunker Hill and since when the nation and its people called upon us.

To remain relevant for the next 200 years we need to ensure we imprint the attributes necessary to meet future challenges into our organizational "DNA."

This process is not a one-time phenomenon. The Corps will come again to the cross in the road and will need to make the critical decision on which path it will take. We need to now imprint the “DNA” code that will give the Corps the values, skills, and organization that will make it adaptive to a changing environment; responsive to customers and the nation; and to leverage its unique heritage and rich history.

VII. Recommendations

. Doing the Right Things

Is the Corps doing the “right things” is a strategic issue of ensuring that we are moving the Corps in the same direction of the needs of our customer and the country. Part of this intimately knows the customer. “Walking in the same shoes as our customers” is perhaps the best way of understanding them. We recommend:

- . Have Air Force Officers as Deputy District Engineers in selected Districts with large Air Force programs.

- . Create an opportunity for non-USACE assigned engineers officers (e.g., garrison and installation Commanders) who manage facilities to have short (3-6 months) developmental assignments with USACE.

- . Align developmental assignments within the Intern and Executive Development Program with our customers and other agencies. Currently most developmental assignments are focused internally.

- . Have a requirement that all project and program managers complete a development tour with our customers. Also have a project and program manager developmental program within each District to insure that they are familiar with our own organization and all of the capabilities of the District elements and USACE at large.

. Doing the Rights Things Right

We need to establish effective continuous improvement processes. Many around the Corps have established TQM programs with mixed success. We have numerous Army and Corps initiatives and programs that address quality and improvements. We need to focus all these efforts into one strategic corporate plan. Critical focus areas include:

- Define quality standards

- Focus on a few critical business functions not stovepipes.

- Establish customer focused quality standards jointly developed with customers

- Establish life cycle project management
- Balance funds control and financial management needs
- Enhance Technology development and transfer
- Optimize AIS development and implementation

. Change the “DNA” of the Corps

The Corps can only effectively change by changing its very core or its “DNA.” USACE needs to ensure that we are not merely cloning the past. Almost 99% of 15/SES positions are selected from within the Corps. This is even truer within our technical positions. The selection process is a key element in how an organization replicates itself and its adaptive skills for future change. The Chief has already formalized the GS14/15 selection process. We feel that two initiatives need to be further pursued. The first is to expand the selection process to GS12 and 13 levels. The 12 and 13 levels is the essential pool of talent that will become our future leaders at the 14 and 15 levels. We need to start sooner during the formative years in developing functional and organizational diversity and leadership skills. The qualities of 14 and 15s to be selected are developed earlier. The current process is similar to never training second lieutenants until they make lieutenant colonel then expect them to have full competency of leadership and management immediately. We need to formalized the development process and encapsulate the essential elements of the DLAMP program at the working levels. The DLAMP emphasizes four critical elements:

- . Leadership and management courses
- . Developmental assignments
- . Professional military education
- . Professional certification

We need to maintain a technical as well as leadership focus on the GS-12 and 13 positions. These positions are where the quality products and services are produced. Many other quality organizations have a parallel technical path where they develop world class technical skills to market.

We also need to recognize that not everyone wants to be a manager or a researcher. Following the pattern in private industry, we need to develop intermediate technical high grade positions (GS-13) within our organization focusing on technical and team leadership skills. Attracting, developing, and maintaining in-house technical excellence leveraged with our world class laboratories and AE contracts are essential to deliver the quality and cost effective products and services being demanded by our customers. In addition to the management career path we need to provide an alternative technical

career path which permits our technically orientated people to retain focus on their technical skills. We need to fully incorporate these elements into our development process at the entry levels not just at senior grades.

. Change the cost structure

The issue of over-head costs has been debated internally since probably the earliest days of its formation. The concept of overhead costs needs to be re-evaluated and focused in conjunction with the Corps' cost structure. Our customers deem our total engineering fee to be overhead. How we internally distribute our costs is just merely an internal accounting exercise. We seem to comfort ourselves by moving our costs from overhead to direct to project will somehow make the customers feel that the money is better spent when the original argument was that we cost too much. It doesn't make sense within our cost structure when we consider having engineers sitting around waiting for the next dam that will never be built, an investment while spending on technology, training, and facilities that make the organization more effective a cost.

The issue is not whether the overhead is high but rather is the cost structures appropriate. The following typical cost structures should be evaluated. We appear to have inherent redundancies

. Program management

We are making efforts to finally address Project and Program Management (PPM). We need to recognize that PPM is shifts in business culture not an additional stovepipe function. The critical mass to change our "DNA" regarding PPM is not yet complete. The Division Business Center at the Divisions will be a significant cultural change that is integral to our PPM initiative.

. Technology development and transfer

The issue is not that our technology development and transfer is critical but rather how can we deliver the right products at the right time at the least costs. We concurrently have six laboratories that are independent from each other and may have duplicative development areas. "Not sure here but I thought that the reorganization of the labs placed them all under one command structure to preclude duplication of effort."

. AIS development and transfer

A critical factor in the future will be our ability to leverage our AIS in the post-industrial information age. We need our AIS implementation to be world class.

. General administration; supervision & administration and engineering & design costs

We recognize that many installation agencies receive support at no costs such as contracting, resource management, personnel, legal, logistics, and information management through OMA supported offices and positions. Consequently, they have an accounting cost advantage. To the taxpayer these costs are still an integral part of the overall costs of building and maintaining facilities. We need to “level the playing field” through full accounting of these costs by the installations.

. “Manage Change”

Change needs to be managed. John Kotter^{5/} puts forth a formal process that helps to manage change.

To simply say we will move into installation business that revolves around operations and maintenance is not a simple tasking. This would be like saying that since Nieuman Marcus is in the same general business (i.e., general merchandise sales), making a strategic move to compete with Wal-Mart in the discount business is only a business decision. Both companies currently compete in distinct markets that require a different set of values and business practices to succeed. The Corps needs to recognize that its values and business practices need to change to fit within the target market segment. The cost structures and business values required to sustain a MILCON oriented program versus operations and maintenance program is significantly different. The change process needs to be managed and cultivated.

- . Environmental challenges of the future
- . A privatized business climate
- . Support full spectrum military operations
- . Timely migration to other key products and services

The Corps of Engineers is subjected to economic and competitive forces as any other large enterprise. The private sector underwent dramatic forces and pressures to change from a post WWII monopolistic environment to a global competitive one. After WWII, US industry enjoyed a monopoly as the rest of the

world was in ruin. The US industry enjoyed this environment until a wake-up call from Germany and Japan. Lean production, quality management, and customer focus were forces that changed American industries. A full policy of privatization may change the competitive and economic forces for public agencies. However, we can utilize our skills in assembling and negotiating multi-organizational partnerships and facilitating “best fit” rational decisions to insure that we remain in the forefront in servicing the Nation’s Federal engineering needs.

List of Abbreviations and Acronyms

A-E	Architect-Engineer
AO	Area of Operation
CADD	Computer Aided Drafting and Design
CINC	Commander-in-Chief
DEH	Director of Engineering and Housing
DPW	Director of Public Works
DGPS	Digital Geographic Positioning System
DLAMP	Defense Leadership and Management Program
EAC	Echelon Above Corps
EAD	Echelon Above Division
EDP	Executive Development Program
FEBA	Forward Edge of Battle Area
GIS	Geographic Information System
HVAC	Heating Ventilation and Air Conditioning
LOGCAP	Logistical Civilian Augmentation Program
MSC	Major Subordinate Command
NBC	Nuclear, Biological, and Chemical
NCO	Non-Commissioned Officer
OOTW	Operations Other Than War
POC	Point of Contact
SFO	Support For Others
USACE	US Army Corps of Engineers
WAN	Wide Area Network

Footnotes

- 1/ Many refer it to a “curse” where it is double edged.
- 2/ As noted in CEPOD-ED Memorandum for Record dated 29 August 1988, Subject: Chief’s Transition Workshop, West Point, New York, (21-24 Aug 88).
- 3/ CEPOD-DE Memorandum dated 27 September 1988, Subject: Chief’s Transition Workshop.
- 4/ Only USACE ones are listed here. The table (Figure 1) listed others not directly germane to USACE.
- 5/ In his book “Leading Change” John Kotter describes an eight step formal process to help lead change.

Bibliography

Bridges, William, "The End of the Job", Fortune Magazine, Sept 19, 1994.

Cohen, William S., Secretary of Defense, "Defense Reform Initiative Report", Nov 97.

Davenport, Thomas H., "Information Ecology", Oxford University Press, 1997.

Engineer Studies Center, "Strategic Directions for the 1990's", CEESC-R-89-12, US Army Corps of Engineers, Casey Building #2594, Ft. Belvoir, VA 22060-5583, Jul 1989.

GAO, "Reengineering Organizations, Results of a GAO Symposium", US General Accounting Office, GAO/NSIAD-95-34, Dec 1994.

Kotter, John P., "Leading Change", Harvard Business School Publications, Sep 1, 1996.

MacMillian, Ian C and Patricia E. Jones, "Designing Organizations to Compete", The Journal of Business Strategy, Vol. 4, No 4, Spring 1984.

Stewart, Thomas, "Reengineering The Hot New Managing Tool", Fortune Magazine, Aug 23, 1993.